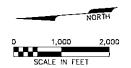


ELECTRICAL LAYOUT - OWNER PROPOSED ALIGNMENT



ELECTRICAL SHEET INDEX

REFERENCE PLAN ELECTRICAL LAYOUT E002 PARTIAL PLAN A ELECTRICAL LAYOUT E003 PARTIAL PLAN B ELECTRICAL LAYOUT E004 PARTIAL PLAN C ELECTRICAL LAYOUT PARTIAL PLAN D ELECTRICAL LAYOUT E005 PARTIAL PLAN E ELECTRICAL LAYOUT E006 E007 PARTIAL PLAN F ELECTRICAL LAYOUT PARTIAL PLAN G ELECTRICAL LAYOUT E008 E009 PARTIAL PLAN H ELECTRICAL LAYOUT E010 DETAILS E011 DETAILS E012 DETAILS E013 DETAILS E014 DETAILS

GENERAL NOTES

ALL WORK SHALL COMPLY WITH MOST RECENT EDITION OF THE NESC. 2. ALL CONSTRUCTION TO MEET RUS STANDARDS, EXCEPT WHERE SPECIFICALLY MODIFIED BY CONTRACT DOCUMENTS. 3. POLE LOCATIONS AND POLE FRAMING AND GUYING MAY BE FIELD ADJUSTED TO ACCOMMODATE RIGHT-OF-WAY CONFLICTS NOT EVIDENT PRIOR TO CLEARING. 4. NEUTRAL SHALL NOT CROSS PRIMARY IN ANY SPAN. 5. PROVIDE ALL ANCHOR PLACEMENTS AT

1:1 MEASURED AT THE UPPERMOST GUY ATTACHMENTS, UNLESS OTHERWISE NOTED. 6. SOURCE IS NEW POWER PLANT; FRAME DOUBLE DEADEND POLES WITH THE SOURCE DEADEND ABOVE.

7. SEE E014 FOR DETAIL SCHEDULE OF STANDARD RUS DETAIL REFERENCES FOR DETAILS USED, BUT NOT DRAWN FOR THIS PROJECT.



POWER SYSTEM UPGRADE CHITINA, ALAKSA

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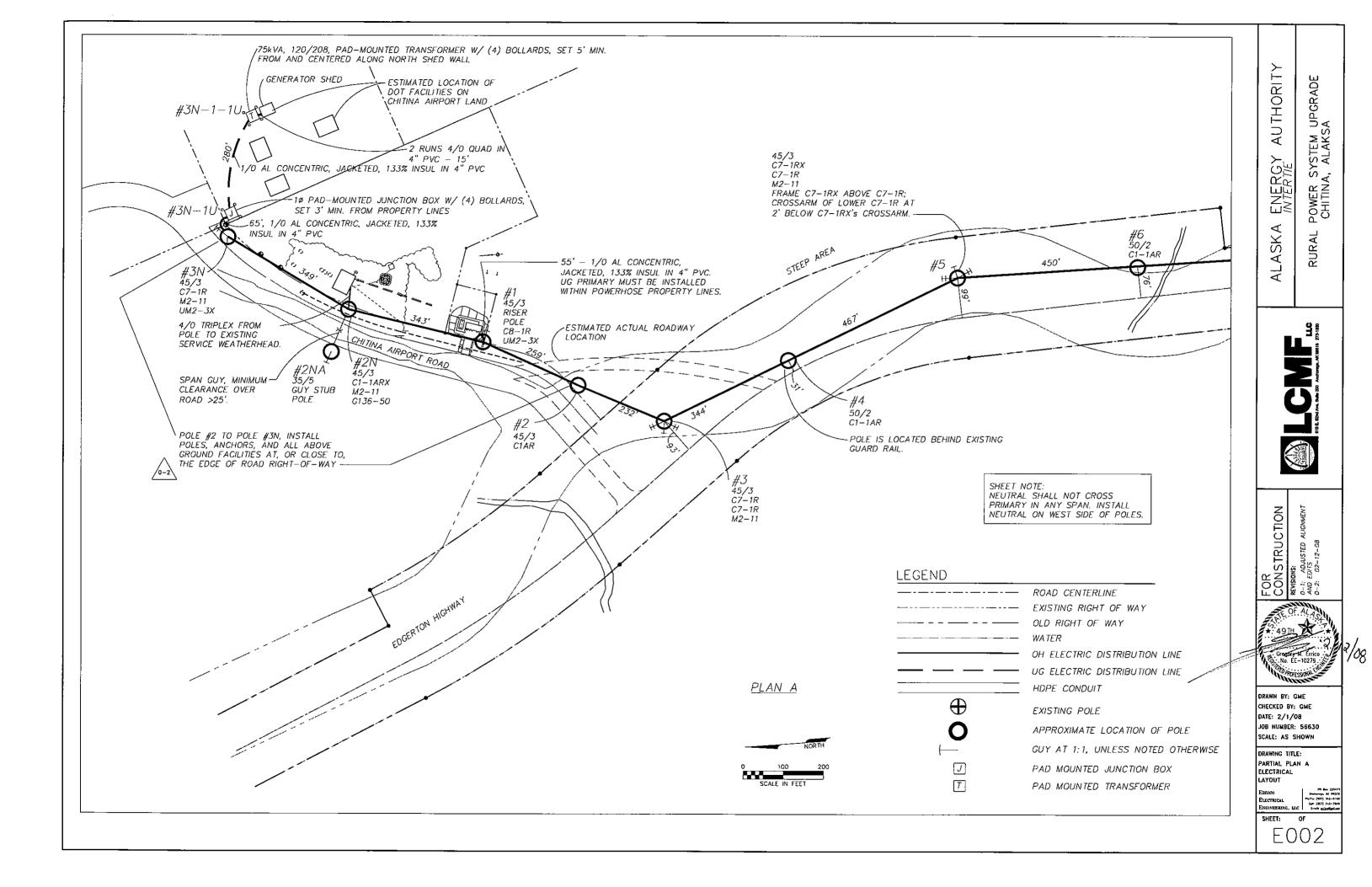


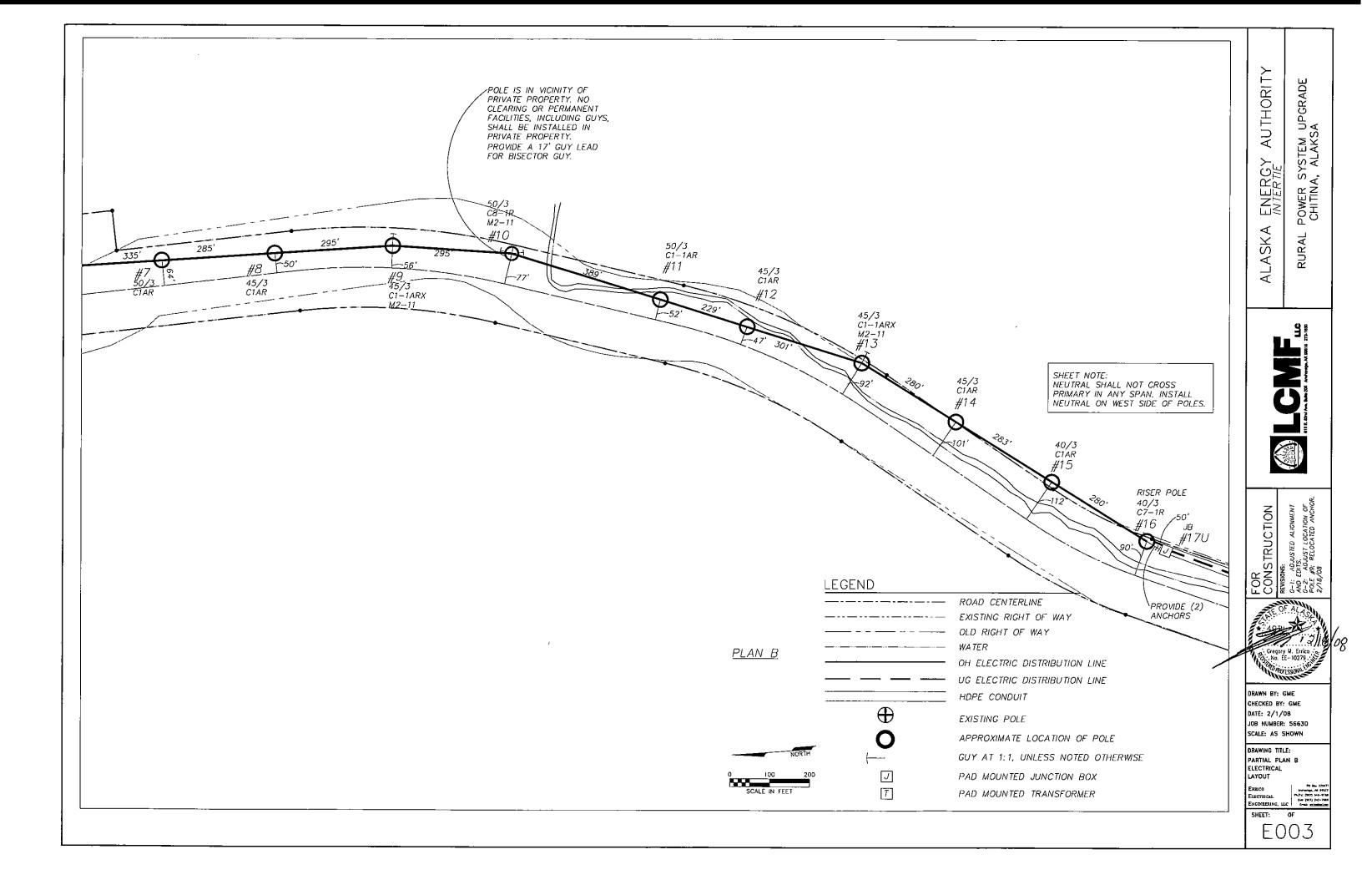
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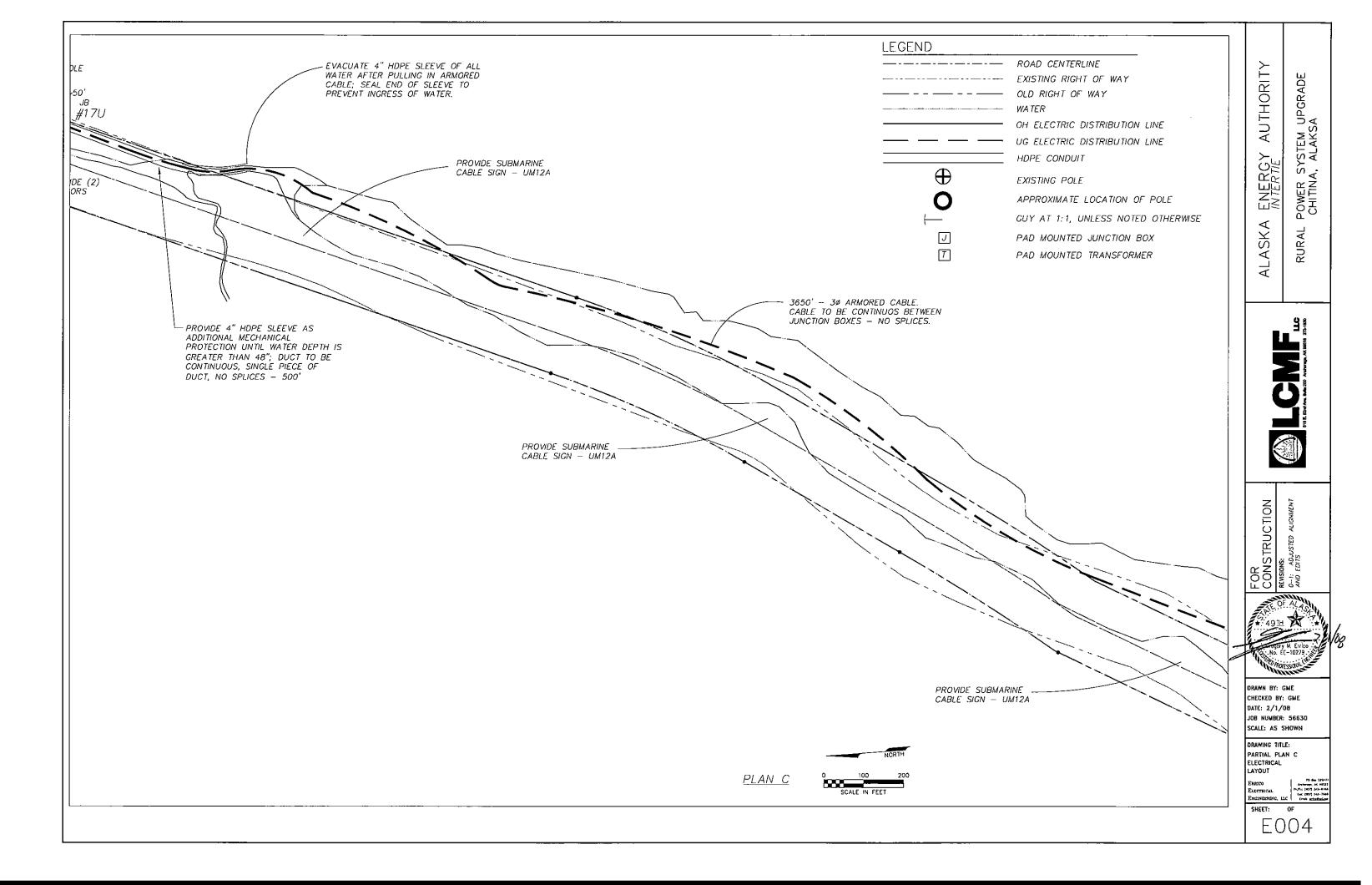
DRAWING TITLE: REFERENCE PLAN ELECTRICAL LAYOUT

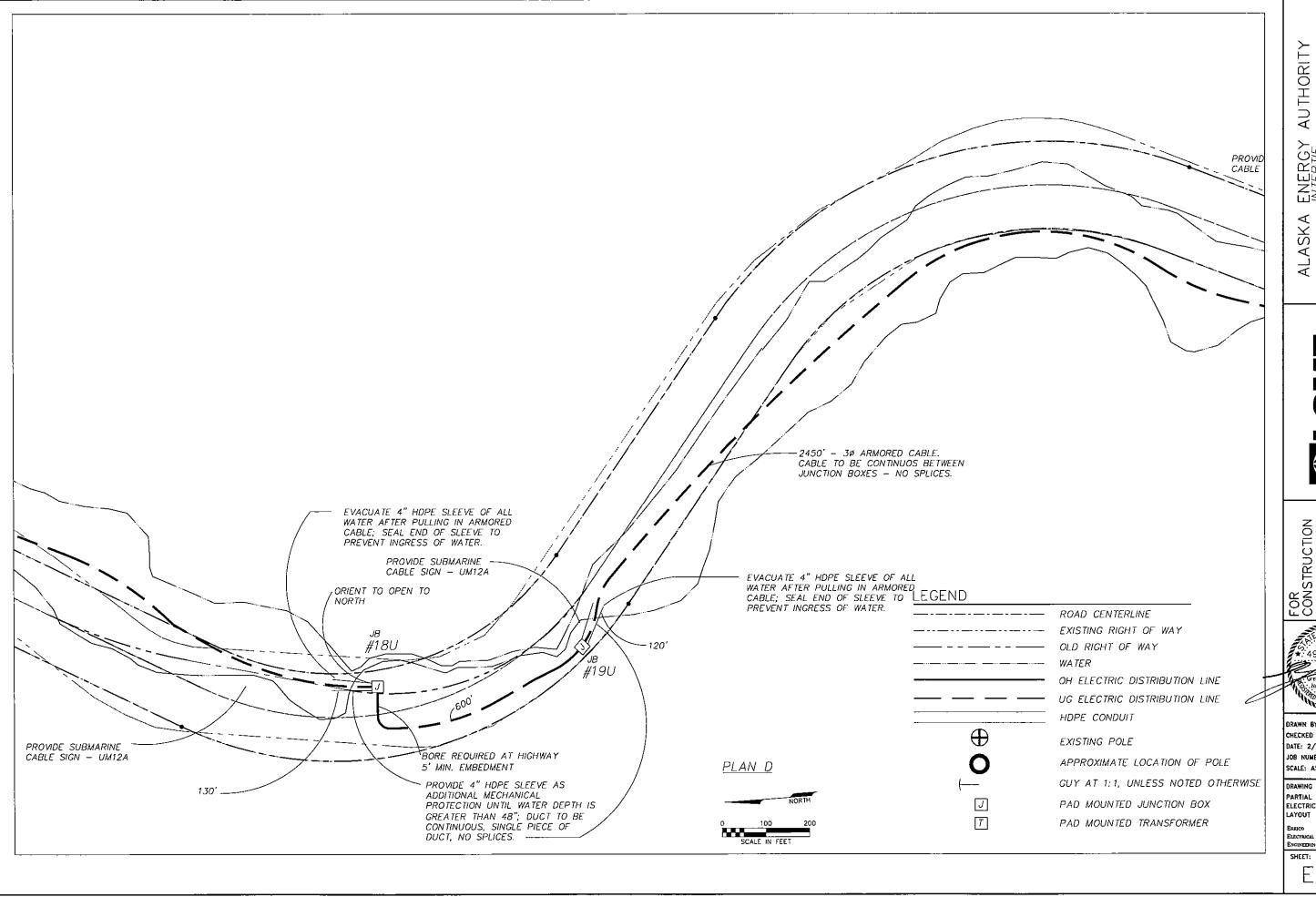
ELECTRICAL Co. (1977) NO.
ENGINEERING, LLC Cont. (1977) To.
ENGINEERING, LLC Cont. (1977) To. OF

SHEET: E001









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POWER SYSTEM UPGRADE CHITINA, ALAKSA

FOR CONSTRUCTION REVISIONS:

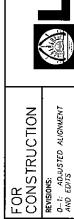
REVISIONS:
0-1: ADJUSTED ALIGNMENT AND EDITS



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DRAWING TITLE: PARTIAL PLAN D ELECTRICAL

OF



POWER SYSTEM UPGRADE CHITINA, ALAKSA

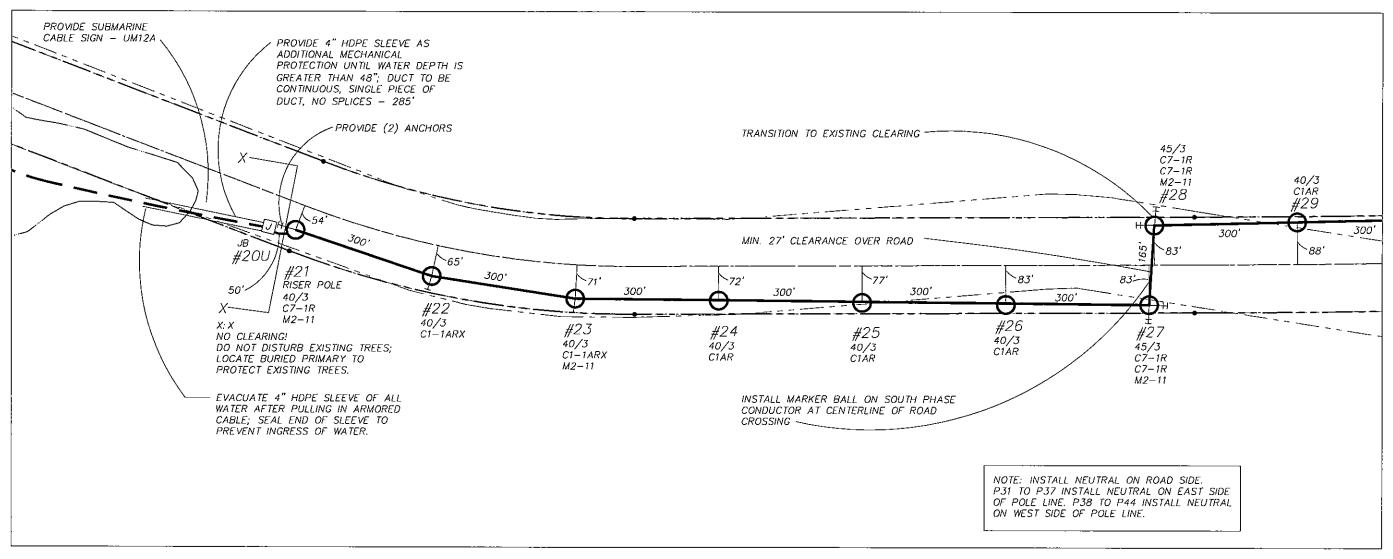
RURAL

RAWN BY: GME CHECKED BY: GME

DATE: 2/1/08 JOB NUMBER: 56630 SCALE: AS SHOWN

DRAWING TITLE: PARTIAL PLAN E ELECTRICAL AYOUT

E006



PLAN E

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LEGEND

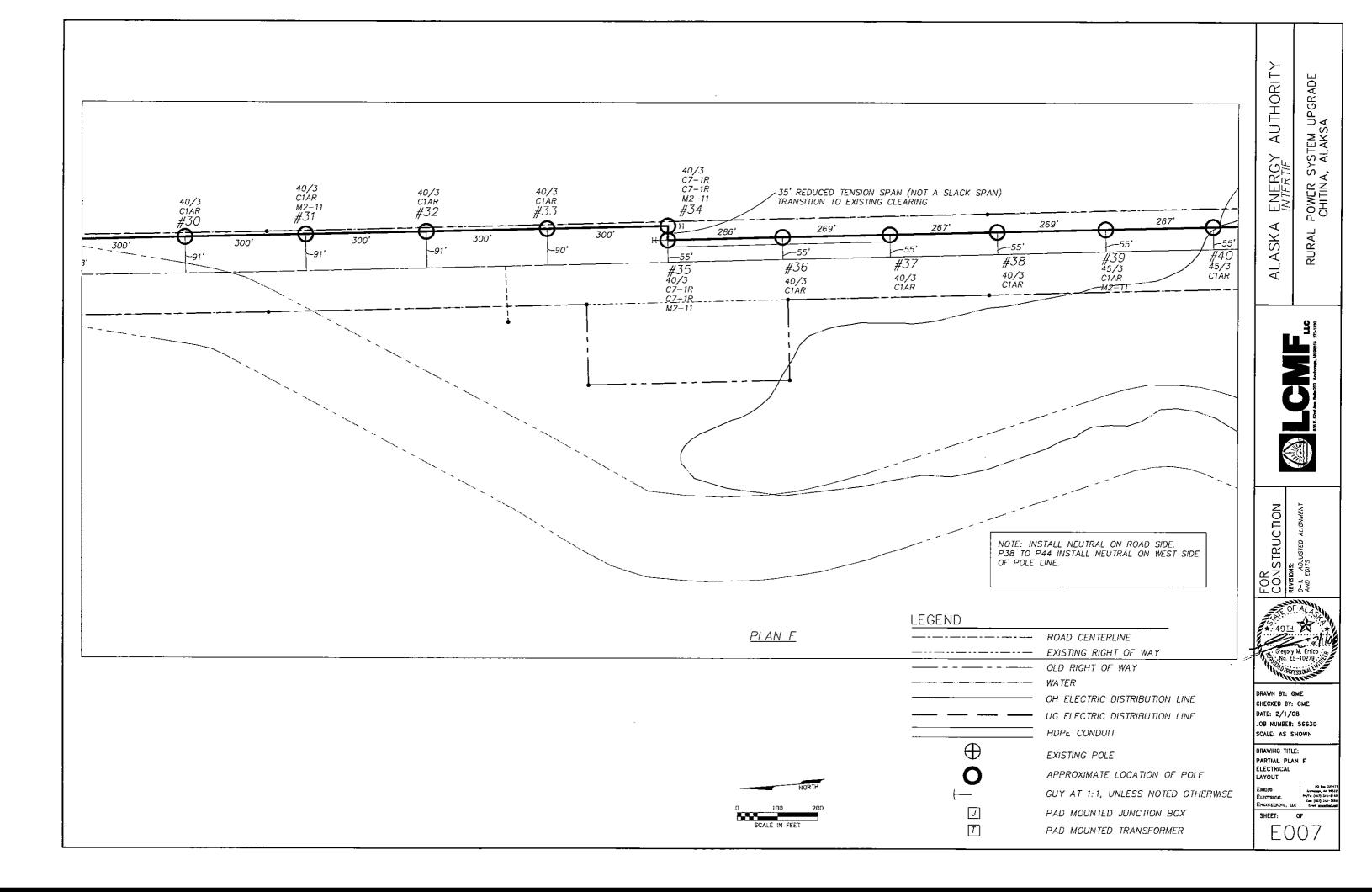
ROAD CENTERLINE EXISTING RIGHT OF WAY OLD RIGHT OF WAY WATER OH ELECTRIC DISTRIBUTION LINE UG ELECTRIC DISTRIBUTION LINE

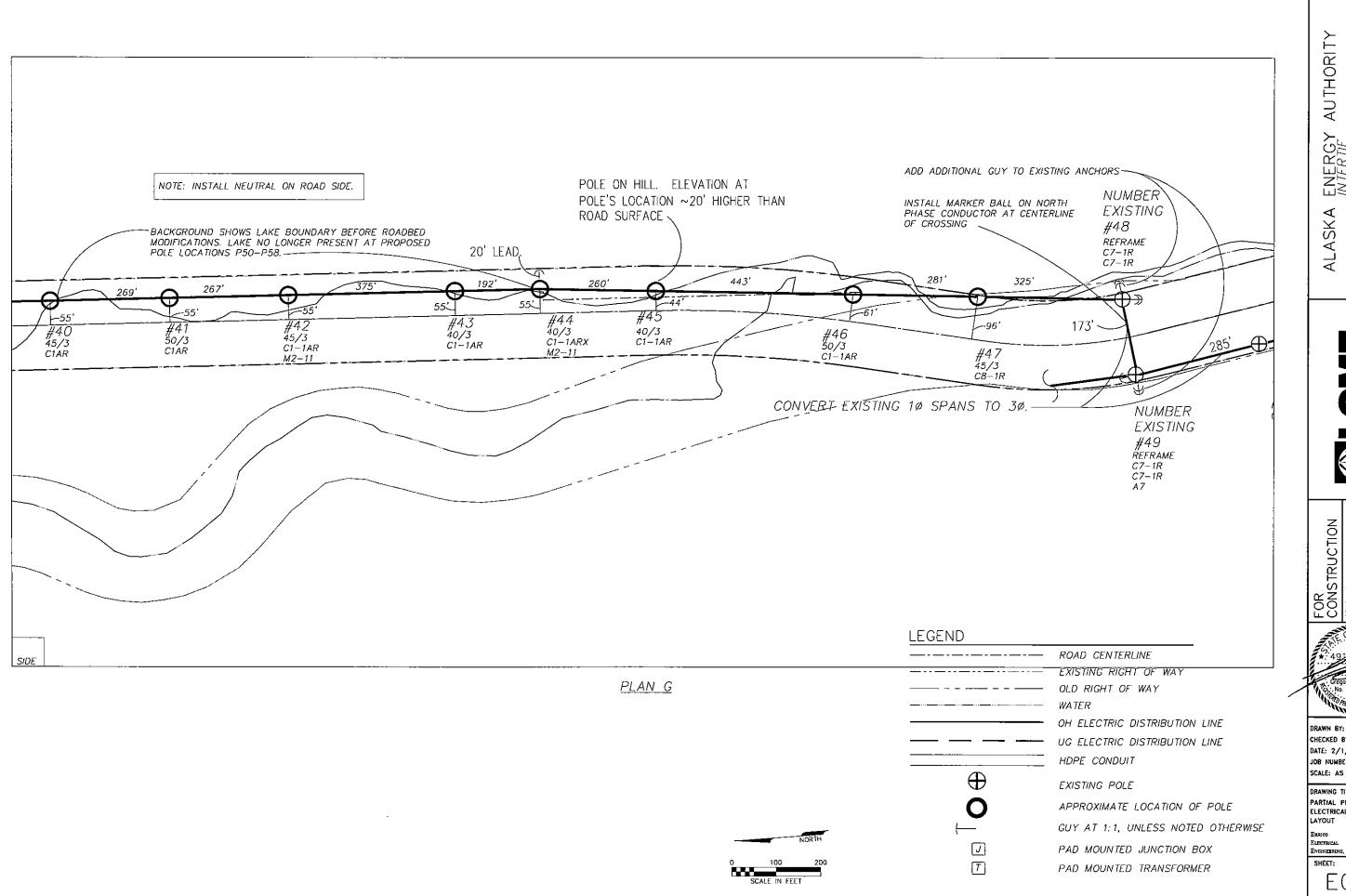
EXISTING POLE

GUY AT 1:1, UNLESS NOTED OTHERWISE PAD MOUNTED JUNCTION BOX

PAD MOUNTED TRANSFORMER

APPROXIMATE LOCATION OF POLE





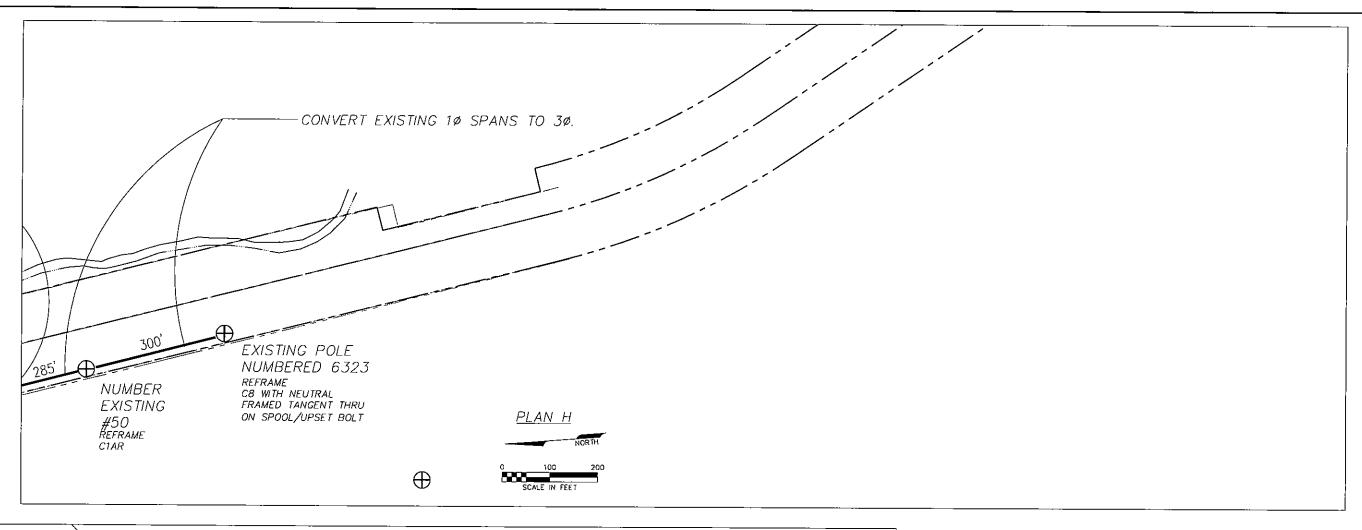
POWER SYSTEM UP CHITINA, ALAKSA RURAL

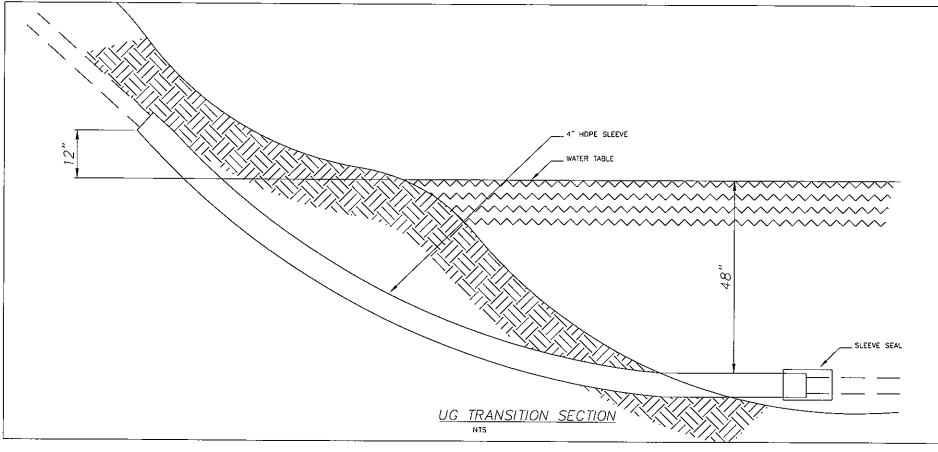


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DRAWING TITLE: PARTIAL PLAN G ELECTRICAL

OF





LEGEND	
	ROAD CENTERLINE
	EXISTING RIGHT OF WAY
	OLD RIGHT OF WAY
	WATER
	OH ELECTRIC DISTRIBUTION LINE
	UG ELECTRIC DISTRIBUTION LINE
	HDPE CONDUIT
\oplus	EXISTING POLE
0	APPROXIMATE LOCATION OF POLE
\leftarrow	GUY AT 1:1, UNLESS NOTED OTHERWISE
J	PAD MOUNTED JUNCTION BOX
T	PAD MOUNTED TRANSFORMER

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POWER SYSTEM UPGRADE CHITINA, ALAKSA

FOR CONSTRUCTION

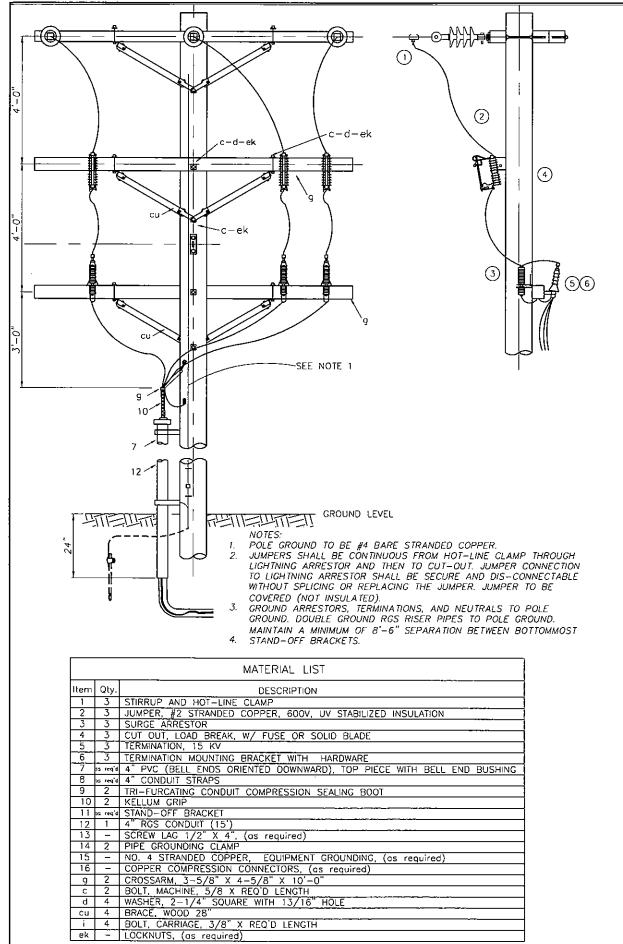


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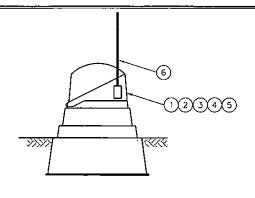
DRAWING TITLE: PARTIAL PLAN H ELECTRICAL LAYOUT

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SHEET: OF

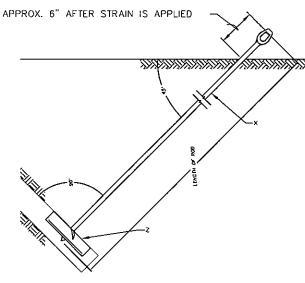


3) <u>UM2-3X: THREE PHASE RISER</u> NTS



MATERIAL LIST					
ITEM	QTY	DESCRIPTION			
1	1	BERGLASS JUNCTION ENCLOSURE: POWER DESIGN			
		INC. PART#CJP-33/S-50-L2-MG, OR APPROVED EQUAL			
2	1	3/4" COPPER CLAD STEEL RODS			
3	1	GROUND ROD CLAMP			
4	1	#4 BARE STRANDED COPPER, AS REQUIRED			
5	3	3 THREE-POSITION JUNCTIONS			
6	1	SNOW MARKER			

4) <u>UM3-02 JUNCTION BOX</u>



QUANTITY	ANCHOR TYPE - STEEL PLATE ULTIMATE CAPACITY, CLASS 6 SOIL 16,000 LBS.
1	ANCHOR - PLATE, 400 SQ. IN
1	ROD, ANCHOR, TRIPLE EYE

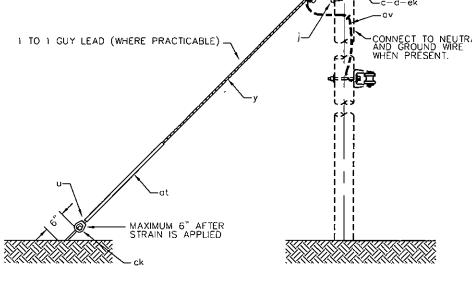
- RECOMMENDED MINIMUM PROJECTION AFTER PRELOADING IS 6 INCHES. PROJECTION MAY BE INCREASED TO AVOID OVERTORQUING OF THE SHAFT.

 THE ANCHOR ROD, NUTS, AND PLATE SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153.

 CONTRACTOR SHALL INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURES OF RECOMMENDATIONS.
- MANUFACTURER'S RECOMMENDATIONS.

	MATERIAL LIST
NO.	DESCRIPTION
×	ROD, ANCHOR, TWIN EYE, 3/4" x 8'-0"
Z	ANCHOR, PLATE, 400 SQ. IN.

2 F1-4P: PLATE ANCHOR



- FORMED TYPE GRIPS MAY BE USED ONLY WITH SUITABLE ATTACHMENTS, (ITEM V) RECOMMENDED BY GRIP MANUFACTURER.
- 2. WHERE SEPARATE ANCHORS ARE INSTALLED THE MINIMUM SEPARATION SHALL BE FIVE FEET.
- SPACING BETWEEN ANCHORS SHALL BE SUFFICIENT TO PROVIDE MAXIMUM HOLDING POWER OF EACH ANCHOR.
- 4. FOR LOOSE SOILS, CONCRETE OR OTHER, POLE FOOTINGS MAY BE

		MATERIAL LIST				
Item	QTY	DESCRIPTION				
С	1	BOLT, MACHINE, 3/4" X REQ'D LENGTH				
d	1	WASHER, 4" SQUARE, 3/8 THICK, CURVED WITH 13/16" HOLE				
ek	1	LOCKNUTS, 3/4:				
Ĵ	1	SCREW, LAG 1/2' x 4"				
р	Į	CONNECTORS, COMPRESSION, AS REQUIRED				
u	2	DEADEND, PREFORMED, GUY				
V	1	GUY ATTACHMENT (8.500 lbs.)				
У	_	GUY STRAND, 3/8", GALVANIZED STEEL STRAND, EHS, AS REQUIRED				
al	ı	STAPLES, GROUND WIRE, AS REQUIRED				
av	ı	JUMPERS, GOUNDING, AS REQUIRED, #6 BARE SOLID COPPER				
at	1	GUY MARKER, 96" (ORANGE AND YELLOW OR SOLID ORANGE)				
ck	1	CLAMP, ANCHOR ROD, BONDING				

1)E1-3: SINGLE DOWN GUY

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POWER SYSTEM CHITINA, ALAKS

FOR CONSTRUCTION REVISIONS:

0-1: ADJUSTED ALIGNMENT AND EDITS



DRAWN BY: GME CHECKED BY: GME DATE: 2/1/08 JOB NUMBER: 56630 SCALE: AS SHOWN

DRAWING TITLE: DETAILS

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POWER SYSTEM UPGRADE CHITINA, ALAKSA RURAL

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0-1: ADJUSTED ALLOWMENT AND EDITS



DRAWN BY: GME CHECKED BY: GME DATE: 2/1/08 JOB NUMBER: 56630 SCALE: AS SHOWN

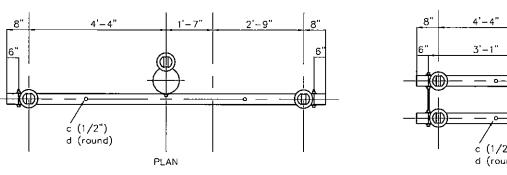
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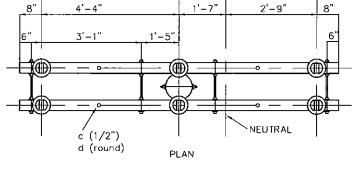
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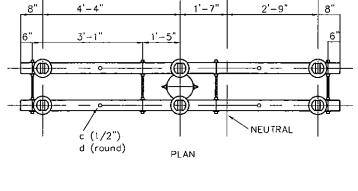
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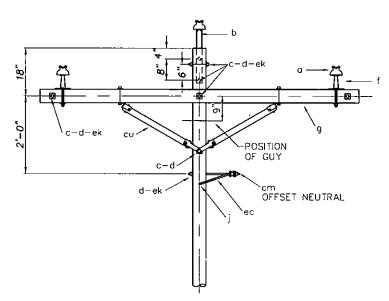
E011

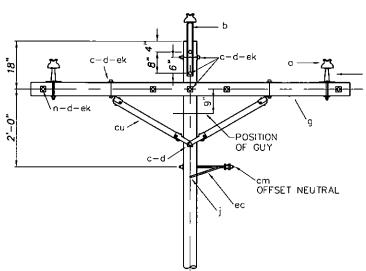
1 C1-1ARX, C1-1ARXX: SMALL ANGLE STRUCTURE











c-d-ek 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
n-d-ek cu POSITION OF GUY aax FOR NEUTRAL AT C1-1ARXX ek d (3" square curved) g POSITION OF FSET OFFSET NEUTRAL ec

MATERIAL LIST DESCRIPTION

a 6 INSULATOR, PIN TYPE, ANSI 55-4
b 2 PIN, pole top. 20", straight or offset
c 5 BOLT, MACHINE, 5/8 X REO'D LENGTH
c 4 BOLT, MACHINE, 1/2"XREQ'D LENGTH
d 4 WASHER, 1-3/8" ROUND WITH 9/16" HOLE
d 20 WASHER, 2-1/4" SQUARE WITH 11/16" HOLE
d 1 WASHER, 3" SQUARE CURVED WITH 13/16" HOLE

cm 1 INSULATOR, SPOOL, 3"
ec 1 BRACKET, OFFSET NEUTRAL
ek 4 LOCKNUT 1/2"

1 ARMOR ROD

ek 20 LOCKNUT, 5/8"

o i NUT, EYE, 5/8"

o i NUT, EYE, 5/8"

o 1 LARGE CLEVIS (C1-1ARX ONLY)

- 3 ARMOR ROD FOR DOUBLE PIN

- 3 PREFORMED WIRE DOUBLE PIN SIDE TIE

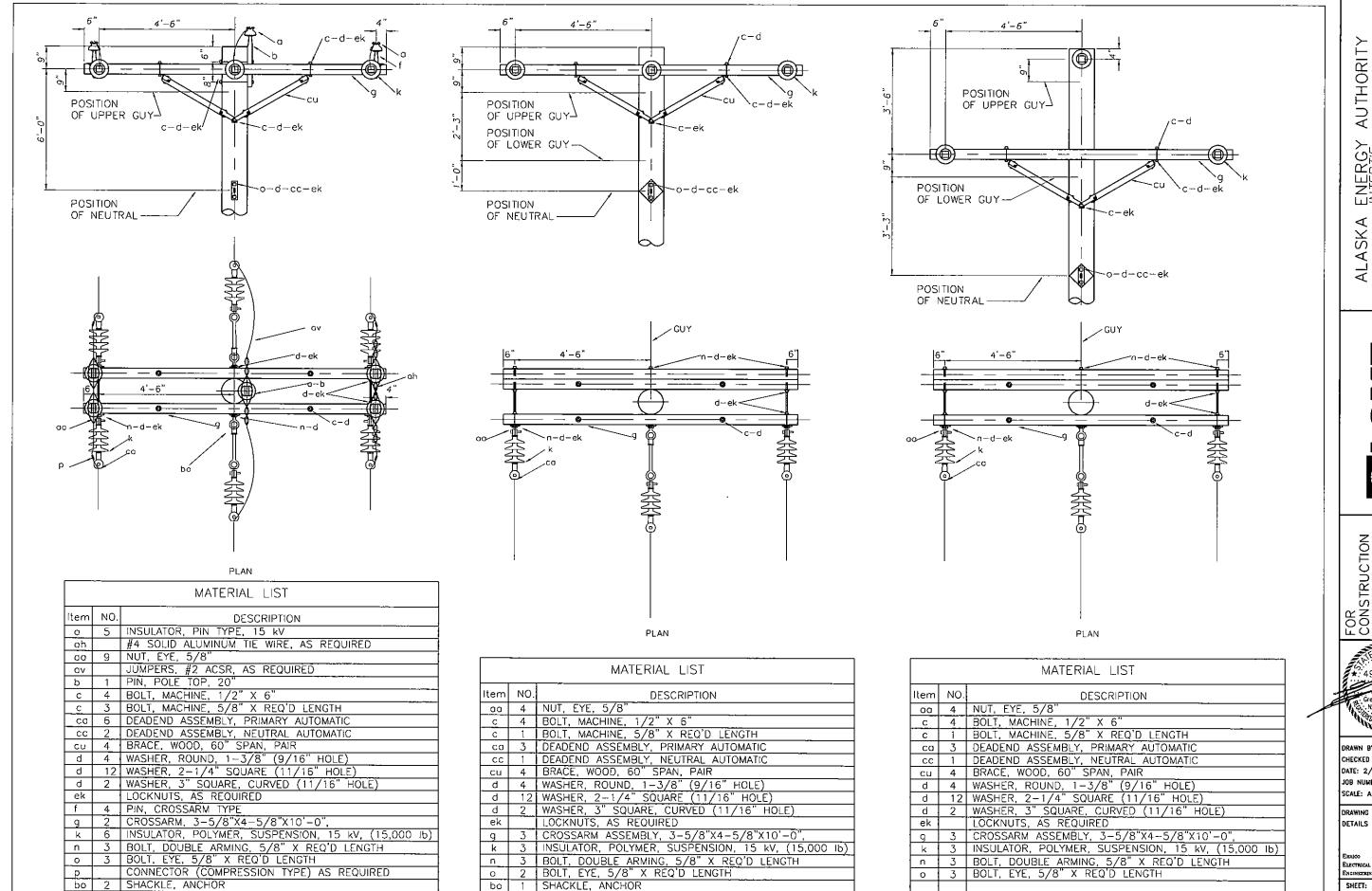
1 PREFORMED NEUTRAL SPOOL ANGLE TIE

I LARGE RIGID CLEVIS (C1-1ARXX ONLY)

4 PIN, CROSSARM, STEEL
2 CROSSARM, 3-3/4" X 4-3/4" X 10'-0"
2 SCREW, LAG, 1/2" X 4"
5 BOLT, DOUBLE ARMING, 5/8" x REQUIRED LENGTH
2 BRACE, WOOD, 60" SPAN, PAIR

		MATERIAL LIST			
NO.	Qty.	DESCRIPTION			
Q.	.3_	INSULATOR, PIN TYPE, ANSI 55-4			
ь	1	PIN, pole top, 20", straight or offset			
n	7	BOLT. MACHINE, 5/8 X REQ'D LENGTH			
С	2	BOLT, MACHINE, 1/2"XREQ'D LENGTH			
· ·	2	SCREW, LAG, 1/2" X 4"			
đ	2	WASHER, 1-3/8" ROUND WITH 9/16" HOLE			
d	12	WASHER, 2-1/4" SQUARE WITH 11/16" HOLE			
ſ	2	PIN, CROSSARM, STEEL, CLAMP TYPE			
g	1	CROSSARM. 3-3/4" X 4-3/4" X 10'-0"			
cu					
cm	1	INSULATOR, SPOOL, 3"			
ec	1	BRACKET, OFFSET NEUTRAL			
ek					
ek					
_	4				
-	3	PREFORMED TANGENT TIE			
_	1	PREFORMED NEUTRAL TANGENT TIE			

	MATERIAL LICT				
	MATERIAL LIST				
NO.:	Oly.	DESCRIPTION			
a	6	INSULATOR, PIN TYPE, ANSI 55-4			
Ь	2	PIN, pole top, 20", straight or offset			
С	5	BOLT, MACHINE, 5/8 X REQ'D LENGTH			
D	4	BOLT, MACHINE, 1/2"XREQ'D LENGTH			
ρ	4	WASHER, 1-3/8" ROUND WITH 9/16" HOLE			
٩	_20	WASHER, 2-1/4" SQUARE WITH 11/16" HOLE			
f	4	PIN, CROSSARM, STEEL			
g	2	CROSSARM, 3-3/4" X 4-3/4" X 10'-0"			
	2	SCREW, LAG, 1/2" X 4"			
5	5	BOLT, DOUBLE ARMING, 5/8" x REQUIRED LENGTH			
Cυ	2	BRACE, WOOD, 60" SPAN, PAIR			
cm:	1	INSULATOR, SPOOL, 3"			
ec	ì	BRACKET, OFFSET NEUTRAL			
ek '	4	LOCKNUT 1/2"			
ek		LOCKNUT, 5/8", AS REQUIRED			
aa	1	LARGE CLEVIS			
_	3	ARMOR ROD FOR DOUBLE PIN			
-	3	PREFORMED WIRE DOUBLE PIN TANGENT TIE			
-	1	ARMOR ROD			
_	1	PREFORMED NEUTRAL SPOOL TANGENT TIE			



(2) <u>C7-1R: SINGLE DEADEND ON CROSSARMS</u>

C7-1RX:

NTS

SINGLE DEADEND ON CROSSARMS

(3) <u>C8-1R: DOUBLE DEADEND ON CROSSARMS</u>

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POWER SYSTEM UP CHITINA, ALAKSA



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DRAWING TITLE: DETAILS

ELECTRICAL

SHEET: OF E013

		MATERIAL LIST
Item	NO.	DESCRIPTION
Α	1	MARKER BALL, RED, 20" DIA., SECURED TO PRIMARY WITH PRE-FORMED HELICAL TIE

POLE GROUND

COMPRESSION SPLICE WHEN REQUIRED

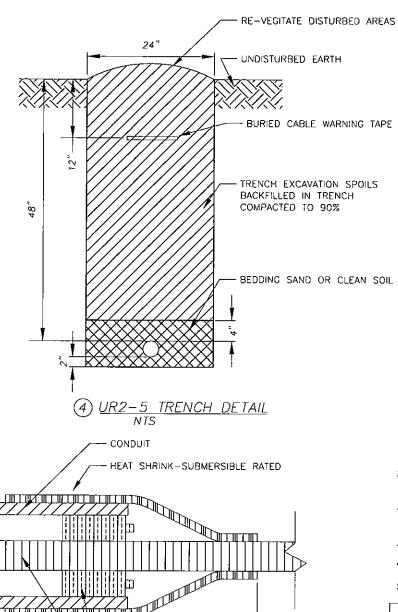
2 MARKER BALL NTS

PROVIDE NSF 3/4 MINUS BACKFILL, MINIMUM 8" ON ALL

GROUND LEVEL

IN 8" LIFTS.

SIDES & BOTTOM, HAND COMPACTED



- JACK MOON SIMPLEX ENTRY SEAL - C-L-X CABLE

3 CONDUIT SLEEVE SEAL

		MATERIAL LIST
Item	Oly.	DESCRIPTION
Uja	1	PAD, CONCRETE, PRE-MANUFACTURED
	5	GRAVEL, D1 OR RECYCLED/CRUSHED CONCRETE, 1" MINUS, CU. YD.

78"

SECTION A-A

-1" CHAMFER

/INSTALL LEVEL, TOP OF PAD TO SLOPE TO DRAIN

(5) UM1B: PAD, 3-PHASE TRANSFORMER

12

NOTES:

ONE SIDE OF RISER.

	MATERIAL LIST		
Item	NO.	DESCRIPTION	
р	as req'd	CONNECTOR, COMPRESSION	
ai	1	ROD, GROUND, COPPER-CLAD STEEL, 5/8" MIN. X 8'	
aj	1	EXOTHERMIC WELD TO GROUND ROD	
٥l	AS REQ'D	STAPLES, COPPER	
al	1	GROUND WIRE CLIP	
cj	AS REQ'D	GROUND WIRE, #6 COPPER	
۵v	AS REQ'D	JUMPER, COPPER	

1 M2-11: POLE GROUND

2'-0"

min

POLE, WHERE THEY SHALL BE 6" APART.

5. DOUBLE GROUND RISER PIPE TO POLE GROUND.

RISER PIPE TO POLÉ GROUND.

SHALL BE STAPLED TO MAINTAIN THIS POSITION.

POLE GROUND

3. GROUND WIRE TO CLEAR ALL HARDWARE BY 2" MINIMUM, AND

POLE GROUND WIRE TO BE LOCATED ON SAME SIDE AS NEUTRAL CONDUCTOR AND IN QUADRANT OPPOSITE CLIMBING SPACE AND ON

2. STAPLES ON GROUND WIRES SHALL BE 2'-0" APART. EXCEPT FOR A DISTANCE OF 8'-0" ABOVE GROUND AND 8'-0" FROM TOP OF

GROUND ARRESTORS, TERMINATIONS, ALUMAFORM BRACKET AND

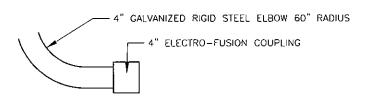


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CHECKED BY: GME
DATE: 2/1/08
JOB NUMBER: 55630
SCALE: AS SHOWN

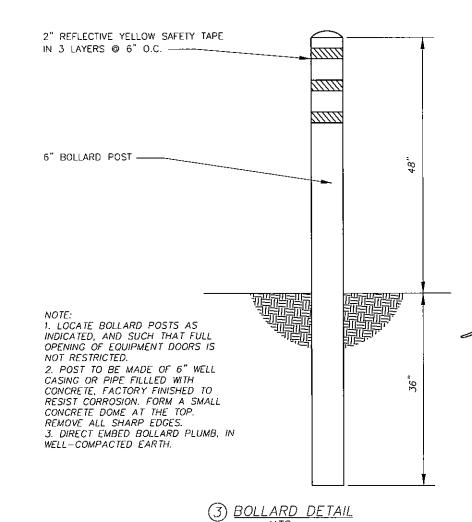
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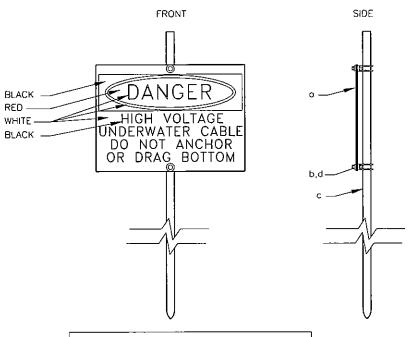
> ERRICO Electrical Engineering, 11

SHEET: OF



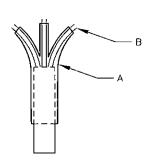
② ELECTROFUSION COUPLING TO HDPE NTS





	MATERIAL LIST				
ltem	Qty.	DESCRIPTION			
a	1	WARNING SIGN, 10"X14"			
b	2	CLAMP, GROUND ROD			
С	1	GROUND ROD, 3/4"X8' GALV.			
d	2	WASHER, ROUND, 3/8"			

4) <u>UM12A: WARNING SIGN, UNDERWATER CABLE</u> NTS



HEAT-SHRINK TRIFURCATING CABLE BREAKOUT BOOT FOR C-L-X CABLE

MATERIAL LIST		
Item	Qty.	DESCRIPTION
Α	1	TRIFURCATING BREAKOUT BOOT KIT, RAYCHEM PART # MOD-3A-HVT
B	AS REQ	UNCOATED REJACKETING TUBING, RAYCHEM PART # MWTM-35/12-1200U

(5) TRIFURCATING BREAKOUT BOOT DETAIL NTS